REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. Claims 13-38 were provisionally withdrawn. Claim 2 has been amended. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

Claim Rejections:

Claim 2 is rejected under 35 U.S.C. 112, second paragraph for allegedly being indefinite. Specifically, "at least a part of one of the device" is deemed to be unclear. The claim has been amended to address this issue. Thus, reconsideration and withdrawal of this objection is respectfully requested.

Prior Art Rejections:

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 7,054,257 to Binnig et al. (hereinafter "Binnig"). Claims 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binnig in view of U.S. Patent 6,477,132 to Azuma et al. (hereinafter "Azuma"). Applicants respectfully traverse this rejection for at least the reasons given below.

Independent claim 1 teaches a read/write arrangement that includes "a device associated with one of the cantilever and the medium which is configured to be responsive to changes in electrical field between the medium and the cantilever caused by a change in distance between the medium and the cantilever" and "a circuit which electrically interconnects both of the device and the heater."

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Binnig. Binnig is directed towards read/write components for AFM-based data storage devices. There is no teaching or suggestion in Binnig of a device that is associated with both the cantilever and the medium that is responsive to changes in the electrical field between the medium and cantilever caused by a change in the distance between the two.

The Examiner cites the heater platform (column 7, lines 10-30) as one teaching of Binnig that relates to the cited feature of the invention as claimed. However, the device of the instant invention responds to changes in the electrical field between the medium and the cantilever. In Binnig, data bits are detected by monitoring changes in the temperature of the heater platform by monitoring changes in voltage across a series resistor in one of the supply lines of the cantilever. (column 7, lines 26-30) However, monitoring changes in voltage to determine a change in temperature is in no way equivalent to responding to changes in the electrical field between the medium and the cantilever, as is well known in the art. Thus, the heater platform and heat sensing capabilities of Binnig are in no way equivalent, or even relevant to, the ability of the invention as claimed to respond to changes in the electrical field between the cantilever and the medium.

The Examiner also refers to the circuitry of Binnig to teach this feature of the independent claims. First, there is no suggestion or teaching in Binnig that the circuitry is connected to the heater platform of Binnig. The circuitry deals with supplying or withholding power supply to the components of the array of read/write components on the medium. (column 14, lines 1-5) The read/write components of Binnig include the cantilever, probe, heater, and so forth of Binnig. Thus, the circuitry supplies power to the component as a whole, supplying power to different parts of the component depending on whether the component is in read mode or write mode. There is no teaching or suggestion in Binnig that this circuitry deals with or responds to the electrical field between the medium and the cantilever. In fact, the circuitry does not deal with the medium at all, let alone an electrical field between the medium and the cantilever.

There is no other teaching in Binnig of monitoring the electrical field between the cantilever and the medium, let alone responding to changes in that electrical field.

Further, there is no teaching or suggestion in Binnig of "a circuit which electrically interconnects both of the device and the heater." Even if Binnig taught the device of the invention as claimed, there is no teaching or suggestion in Binnig of a circuit that connects both the heater and the device. Thus, if this rejection is maintained, the Examiner is respectfully requested to point out where these features are found in Binnig.

The dependent claims are also in condition for allowance for at least the same reasons, as discussed above, as the independent claims on which they ultimately depend. In addition, they recite additional patentable features when considered as a whole. Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

Claims 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binning in view of Azuma. Azuma fails to make up for the deficiencies of Binnig as detailed above. There is no teaching or suggestion in Azuma of a device that responds to changes in the electrical field between the medium and the cantilever caused by a change in distance between the medium and the cantilever. Further, there is no suggestion or teaching in Azuma of a circuit that interconnects the device and the heater disposed on the read/write arrangement. In fact, Azuma does not even teach or suggestion a heater, let alone a circuit that would connect a heater to a device.

Thus, Azuma also fails to teach this feature of the independent claims, specifically failing to teach a read/write arrangement that includes "a device associated with one of the cantilever and the medium which is configured to be responsive to changes in electrical field between the medium and the cantilever caused by a change in distance between the medium and the cantilever" and "a circuit which electrically interconnects both of the device and the heater." (independent claim 1) Thus, if this rejection is maintained, the Examiner is respectfully requested to point out where these features are found in Azuma.

Further, Azuma was relied upon to teach additional features of the dependent claims. Azuma also fails to teach these additional patentable features. For example, Azuma was relied upon to teach the read/write arrangement, "wherein the circuit comprises a plurality of electrically conductive traces which are formed in the cantilever and which comprise a source and a drain of the FET and wherein the source or drain of the FET forms part of a circuit which supplies electrical current to the heater." (dependent claim 7) However, there is no suggestion or teaching in Azuma of such a circuit. The Examiner relies on Figure 1 of Azuma to teach this feature. However, it is clear that the circuit does not comprise a plurality of electrically conductive traces. Further, there is no teaching or suggestion in the

corresponding description, or anywhere else in the disclosure of Azuma, of a plurality of electrically conductive traces formed in the cantilever. Further, the source and the drain of the FET in Azuma are clearly pointed out in Figure 1. There is no teaching in Azuma that they are part of a circuit which supplies electrical current to the heater. In fact, there is no mention at all in Azuma of a heater.

The Examiner later refers to Figs. 4 and 5 to teach that the "FET is configured to function as a heater." (claim 12) This FET configured as a heater would be in addition to the heater described in the independent claim. As mentioned above, there is no teaching or suggestion of a heater in Azuma. Although the Examiner refers to Figs. 4 and 5 to teach this feature of the invention as claimed, Figs. 4 and 5 refer to different views of the cantilever, and the corresponding description in the disclosure of Azuma makes no mention of the usage of a heater, or the ability of the FET to function as a heater. Thus, if this rejection is maintained, the Examiner is respectfully requested to point out where these features are found in Azuma.

Conclusion:

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 C.F.R. § 1.25. Additionally, charge any fees to Deposit Account 08-2025 under 37 C.F.R. § 1.16 through § 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees.

Respectfully submitted,

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